

Docket No.: NHL-HOL-68
Serial No.: 10/801,924
Customer No.: 00432

Claim Amendments

1-20. (canceled)

21. (new) A bottling plant for filling bottles with liquid beverage filling material, said bottling plant comprising:

a bottle filling machine being configured and disposed to fill bottles with liquid beverage filling material;

said filling machine comprising:

a rotor being configured and disposed to rotate around a vertical machine axis and having a peripheral portion;

a plurality of filling positions disposed at said peripheral portion of said rotor; and

each of said plurality of filling positions comprising:

a bottle carrier being configured and disposed to provide bottles for filling; and

a filling device being disposed above said bottle carrier and configured to fill a bottle disposed on said bottler carrier to a predetermined level of liquid beverage filling material;

a bottle closing machine being configured and disposed to close

Docket No.: NHL-HOL-68
Serial No.: 10/801,924
Customer No.: 00432

filled bottles;

a first conveyor arrangement being configured and disposed to move filled bottles from said filling machine to said closing machine;

a bottle packing machine being configured and disposed to pack closed, filled bottles;

a second conveyor arrangement being configured and disposed to move closed, filled bottles from said closing machine to said packaging machine; and

a cleaning machine being configured and disposed to clean bottles prior to filling with a liquid beverage filling material;

a third conveyor arrangement being configured and disposed to move bottles to said cleaning station from a supply of bottles;

a fourth conveyor arrangement being configured and disposed to move cleaned bottles from said cleaning station to said filling machine; and

said cleaning machine comprising:

a body comprising an inner chamber, an inlet structure, and an outlet structure;

said chamber having chamber walls;

Docket No.: NHL-HOL-68
Serial No.: 10/801,924
Customer No.: 00432

a heating arrangement being configured and disposed to heat said chamber walls to a temperature sufficient to vaporize cleaning medium droplets deposited on said chamber walls;

said inlet structure comprising a first nozzle being configured and disposed in a first position to inject a jet of air in a first direction into said chamber;

said inlet structure comprising a second nozzle being configured and disposed in a second position to inject a jet of cleaning medium in a second direction into said chamber transverse to the first direction to impinge upon the jet of air to generate air laden with droplets of cleaning medium;

said first nozzle and said second nozzle being configured and disposed to direct the air laden with cleaning medium droplets against said heated chamber walls to vaporize the cleaning medium droplets to form a mixture of air and vaporized cleaning medium; and

said outlet structure being configured and disposed to permit and control the flow of the mixture of air and vaporized cleaning medium from said chamber and into a bottle to be

Docket No.: NHL-HOL-68
Serial No.: 10/801,924
Customer No.: 00432

cleaned.

22. (new) The bottling plant according to claim 21, wherein:
said chamber has a width dimension; and
said jet of air is substantially narrower than the width dimension
of said chamber.

23. (new) The bottling plant according to claim 22, wherein:
said vaporization chamber comprises an annular chamber having
two circular concentric walls;
said air nozzle is positioned to direct a jet of air tangential to a
concentric circular path disposed between said two circular annular
concentric walls.

24. (new) The bottling plant according to claim 23, wherein said
body of said cleaning machine comprises a plurality of passages
configured and disposed to connect said annular vaporization chamber
and said outlet structure with one another.

Docket No.: NHL-HOL-68
Serial No.: 10/801,924
Customer No.: 00432

25. (new) The bottling plant according to claim 24, wherein said heating arrangement is configured and disposed to heat said body of said cleaning machine to thus heat said plurality of passages to maintain a mixture of air and cleaning medium within said plurality of passages at at least a temperature at which the cleaning medium is vaporized.

26. (new) The bottling plant according to claim 25, wherein said plurality of passages connecting said annular vaporization chamber and said outlet structure comprises a collecting chamber configured and disposed to store a mixture of air and vaporized cleaning medium.

27. (new) The bottling plant according to claim 26, wherein said plurality of passages comprises a plurality of vertical channels configured and disposed to connect said annular vaporization chamber and said collecting chamber with one another.

28. (new) The bottling plant according to claim 27, wherein said

Docket No.: NHL-HOL-68
Serial No.: 10/801,924
Customer No.: 00432

plurality of passages comprise at least one of: straight passages and circuitous passages.

29. (new) The bottling plant according to claim 28, wherein said body comprises:

at least a first portion and a second portion; and
fasteners to connect said first portion and said second portion to one another.

30. (new) The bottling plant according to claim 29, wherein said outlet structure comprises a structure configured and disposed to inject a mixture of air and cleaning medium into the interior of a container to be cleaned.

31. (new) The bottling plant according to claim 30, wherein said collecting chamber comprises an annular chamber having two circular annular concentric walls.

32. (new) The bottling plant according to claim 21, wherein said

Docket No.: NHL-HOL-68
Serial No.: 10/801,924
Customer No.: 00432

cleaning medium comprises hydrogen peroxide in an aqueous solution.

33. (new) The bottling plant according to claim 32, wherein:
said chamber has a width dimension; and
said jet of air is substantially narrower than the width dimension
of said chamber.

34. (new) The bottling plant according to claim 33, wherein:
said vaporization chamber comprises an annular chamber having
two circular concentric walls;
said air nozzle is positioned to direct a jet of air tangential to a
concentric circular path disposed between said two circular annular
concentric walls.

35. (new) The bottling plant according to claim 34, wherein said
body of said cleaning machine comprises a plurality of passages
configured and disposed to connect said annular vaporization chamber
and said outlet structure with one another.

Docket No.: NHL-HOL-68
Serial No.: 10/801,924
Customer No.: 00432

36. (new) The bottling plant according to claim 35, wherein said heating arrangement is configured and disposed to heat said body of said cleaning machine to thus heat said plurality of passages to maintain a mixture of air and hydrogen peroxide within said plurality of passages at at least a temperature at which the hydrogen peroxide is vaporized.

37. (new) The bottling plant according to claim 36, wherein said plurality of passages connecting said annular vaporization chamber and said outlet structure comprises a collecting chamber configured and disposed to store a mixture of air and vaporized hydrogen peroxide.

38. (new) The bottling plant according to claim 37, wherein said plurality of passages comprises a plurality of vertical channels configured and disposed to connect said annular vaporization chamber and said collecting chamber with one another.

39. (new) The bottling plant according to claim 38, wherein:

Docket No.: NHL-HOL-68
Serial No.: 10/801,924
Customer No.: 00432

said plurality of passages comprise at least one of: straight passages and circuitous passages; and

said body comprises:

at least a first portion and a second portion; and

fasteners to connect said first portion and said second portion to one another.

40. (new) The bottling plant according to claim 39, wherein:

said outlet structure comprises a structure configured and disposed to inject a mixture of air and hydrogen peroxide into the interior of a container to be cleaned; and

said collecting chamber comprises an annular chamber having two circular annular concentric walls.